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ABSTRACT

Despite its high unemployment level, Germany is experiencing a shortage of specialists and managers. Germany's need for highly qualified information technology (IT) workers and engineers is particularly great. Approximately 10,000 posts for computer scientists and IT specialists remained vacant in 1998. Because of the shortage of such specialists, "side door" entrants who have studied related disciplines such as engineering and natural sciences and have some knowledge of computer science now also have good chances of a job in the IT sector. A total of 13,000 new jobs were reported in Germany's social care sector in 1998. Almost all of Germany's industrial branches are urgently seeking engineers. The job prospects for economists are questionable unless graduates can show that they have also completed a business training course. The job prospects for lawyers and legal advisers with first-class degrees are improving, and 2,600 more teachers were hired in 1998-1999 than in the previous school year. Employment opportunities for German mathematicians, physicists, chemists, and biologists have also improved considerably. Positions for language and culture scholars also increased. Individuals with the prerequisites for positions in the IT and engineering sectors should be able to secure jobs on the spot. (MN)

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The search for specialists and managers

Staff shortage in Germany

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Summary

Like all highly-developed western industrialised nations, Germany is facing an almost insoluble problem with regard to jobs. The country has high unemployment on the one hand, and on the other a shortage of specialists and managers. Many thousands of such positions are vacant, and this is affecting economic growth. There is at present a particularly great need for highly-qualified information technology (IT) people and for engineers. The German Institute for Business Research (IW), in Cologne, reports regularly on the current situation in this important sector of the job market in its information service, iwd. The following articles stem from the iwd issues 13, 30 and 41 of 1999. They can be called up, together with charts, on the Internet at http://www.iwkoeln.de.

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The job market for graduates is booming

There was movement in the job market for university and degree-granting technical college graduates as early as 1998. The information technology (IT) branch, above all, sought employees desperately. But about 10,000 posts for computer scientists and IT specialists remained vacant last year. Almost all graduates are benefiting from the economic upswing that emerged in Germany in 1999 – given that they are young, have professional experience, and are mobile and flexible.

Whoever combs regularly through the job advertisements in Germany's major daily newspapers will have noticed even during the course of last year that the demand for qualified specialists and managers had clearly increased. Almost 13 per cent more were sought in 1998 than in the previous year.

The scale of the boom in the German job market for graduates is shown by a report of the Central Employment Agency (ZAV) of the Federal Labour Office in Nuremberg. The report said official German employment agencies had notified a total of 152,300 new posts for graduates in 1998. That was about 47,000 more than in the previous year. More than 85,300 graduates were placed in appropriate positions, the report added.

In the official statistics for 1998, this breaks down as follows.

1. Employment – The total number of employed graduates rose by 139,000 to almost 5.4 million by the end of the year. But this increase was accounted for mainly by freelance professionals, company founders and entrepreneurs. The number of graduates liable to pay social security contributions [mandatory for all employed persons] dropped by 25,000 in 1998.

2. Unemployment – In 1998, a total of 198,300 graduates was unemployed, almost 13 per cent less than in the previous year. Only 3.9 per cent of western German and 4.3 per cent of eastern German graduates of degree-granting technical colleges had to turn to an employment office for help in finding a job. Among university graduates the figures were 4.1 per cent and 6.3 per cent respectively.

That meant that in 1998 graduates had a clearly much lesser risk of being unemployed than the rest of the population of working age. By comparison, the general unemployment rate during the year was 9.4 per cent in western Germany and 18.2 per cent in the eastern part of the country.

However, older graduates find it very difficult to gain a foothold in the job market. Amid accelerated structural change and increasing competition, they are coming under increasing pressure to adjust and therefore have a much harder time in finding a job than before. In 1998, some 44 per cent of unemployed graduates of universities or technical colleges was older than 44. In 1992, the figure was only 25 per cent. The increase means that unemployed graduates have drawn level with the general trend in Germany, in which the proportion of all jobless over 40 is 44 per cent.

Individual professional groups have benefited from the growing demand for employees with higher education qualifications to greatly varying degrees.

- **Computer scientists and IT specialists**

  These are especially sought after by German commerce and industry, above all by the IT branches. Because higher education institutions cannot provide the job market with enough graduates, more than 10,000 positions for computer scientists and DP specialists remained vacant in 1998. According to the German Association for Electrical, Electronic and Information Technologies (VDE), vacancies have in fact now risen to 70,000. Due to the shortage of such specialists, 'side-door' entrants who have studied related disciplines such as engineering and natural sciences and have some knowledge of computer science now also have good chances of a job in the IT sector.

- **Social care professions**

  German employment offices reported a total of 13,000 new jobs in this sector in 1998, three out of four of them in youth work. But the demand for welfare and social education workers with business administration and/or IT knowledge could not be met. That was due on the one hand to the applicants' lack of mobility, and on the other to the fact that many older aspirants and women candidates wanted only a part-time job. Most of the offers were for full-time positions.

- **Engineers**

Almost all industrial branches are urgently seeking engineers. Consequently, their unemployment rate – which as recently as 1997 was at a record level – has dropped markedly. Most of the job offers came from the mechanical engineering sector and the electrical and electronics and motor vehicle industries. Engineers were and are also very much in demand in the computer branches. Most sought-after are people with professional experience, aged 30-45, with a sound and comprehensive training in state-of-the-art technology and science, with PC knowledge, command of foreign languages, and so-called 'soft skills' – meaning being able to work in a team and communicate well.

- **Economists**

The usefulness of an economist's studies is the big question. Those with interdisciplinary studies behind them have much better chances of a job than those who have focused on one particular branch of knowledge. That is, unless they can show they have also completed a business training course. Most of the job offers for economists in 1998 came from banks, insurance companies and management consultancies. The research and teaching sectors also showed interest, although most of the offers were for a limited period.

The numbers of jobs vacant for people with business administration degrees (MBAs) or commercial training diplomas increased by 40 per cent in 1998. The service sector sought above all people with Internet experience, with the aim of expanding online services. About one-third of the offers came from small and medium-sized businesses, most of which sought 'all-rounders'.

- **Lawyers**

Lawyers and legal advisers with first class degrees have in the meantime greater chances again of being employed in the administrative and legal sectors in both eastern and western Germany. Companies in 1998 gave preference to promising young lawyers with additional, business-relevant qualifications. Every third offer from commerce and industry, lawyers' chambers and the civil service was for a limited period.

► **Teachers**

About 15,500 teachers were hired at the beginning of school year 1998/99, or about 2,600 more than in the previous year. But a decline in the number of probationary teachers that completed their training helped to ease the pressure on the sector's job market. In addition, a growing number of German software houses and management consultancies put out feelers for teachers with mathematical-scientific and economics capabilities.

► **Natural scientists**

Employment opportunities for mathematicians, physicists, chemists and biologists have also improved noticeably. The number of job offers rose by 30 per cent, most of them for limited periods. But some applicants had to give up their wish to work in research or environmental protection and take a position in IT.

► **Liberal arts scholars**

Positions for language and culture scholars grew much above average. But two-thirds of all placements ended in a job-creation measure, mostly in libraries and museums. Every tenth offer came from publishing companies, financial services and PR agencies.

That the job market for graduates in Germany is once again showing more of its brighter side is also made clear by the balance as at September 30, 1999. Statistically, seven unemployed graduates applied for each vacancy registered at the country's employment offices. A year earlier the ratio was 11:1. But if all job offers and placements over the whole of 1998 are taken into account, the ratio was only 2:1.

Potential in IT jobs not yet exhausted

German commerce and industry, too, could not function without modern information and communication technologies. But while the country's infrastructure and equipment stands up well to international comparison, job growth in the sector could be much better.

The purpose of trade fairs is usually to inform consumers [as well as trade customers] of the latest developments and products in an industry or sector and, ideally, have them take home plastic bags filled with brochures. Such as at the 1999 CeBIT in Hanover, the world's biggest information technology fair. But visitors to that fair were not only able to marvel at the latest hardware and software on offer. Whoever had the right prerequisites was also able to secure a job on the spot. For the producers are desperately seeking new employees.

The same goes for other sectors of the German IT sector, as is shown by an updated survey by the IT professional association in the German Machinery and Plant Manufacturers' Association (VDMA) and the German Electrical and Electronic Manufacturers' Association (ZVEI). The most important findings are given below.

Employment

In 1998, more than 1.7 million people were employed in the German information industry. That was 5.6 per cent more than two years earlier. But the increase of about 90,000 jobs could have been much greater if all vacancies had been filled. Due to a lack of qualified specialists, about 70,000 IT jobs are currently going begging.

In addition, the situation in the German information sector is not uniform. Some branches have double-digit employment growth, others a similar degree of decline. Some examples:

- **IT** was the greatest job winner. From 1996 to 1968, producers of office equipment and hardware and software, as well as providers of IT services, increased their workforce by a total of 26 per cent to more than 420,000. That means the IT branches employ about 24 per cent of all people working in the information industry as a whole.

- **The media,** which with a total of more than 700,000 employees is the information industry's largest employer, increased its workforce by only a good 1 per cent from 1996 to 1998. But the figures in the individual segments fluctuate hugely. They range from a plus of 16 per cent in radio, television and programme production to plus 4 per cent in the book, magazine and music trade and a minus of 18 per cent in film and video production, distribution and sales, as well as cinemas.

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- **The entertainment electronics branch** reported a decline in employment. Within only two years the number of employees dropped by more than 15 per cent to slightly less than 39,000. That means the branch currently employs only 2 per cent of all information and communication workers.

Growing demand for engineers

Every second company polled by the German Institute for Business Research (IW) in 1999 expected a growing demand for engineers over the next three years. Higher education institutions cannot at present meet the need. More and more young Germans have in recent years given technical faculties a wide berth.

The 1999 Hanover Fair showed how critical the shortage of young talent is for German companies. Computer specialists and engineers were hired on the spot. The IW survey of 500 companies also confirmed that in the short term the staff shortage will get even worse.

Fewer engineering graduates

By 2001, the number of graduates in mechanical engineering and electrical and electronics technology will have almost halved compared with 1997. The number of graduates in process technology is shrinking by one-third. That does not surprise the experts. Since the mid-1980s, ever fewer school-leavers have opted for one of these "hard-grind disciplines". Only engineers with degrees in both engineering and business administration are expected to account for a slight increase in graduate figures. But the situation could ease in the medium term. For the first time in years, more entrants to universities and degree-granting technical college enrolled for engineering studies in 1998, giving the mechanical engineering student body a plus of 15 per cent and that of electrical and electronics technology a boost of 7 per cent. But these students will take an average of five to six years to complete their studies before being available to the job market.

Growing demand

Of the German companies, research institutes, public administration offices and higher education institutions polled by IW, 47 per cent expect a growing demand for engineers, and 4

per cent a strongly increased demand. Only 2 per cent of the companies believe that in the short term they will need fewer engineers. A survey carried out at the same time in the machinery and plant manufacturing sector tended to arrive at almost the same findings.

Depending on the economic situation, some branches deviate from this basic pattern.

- The motor vehicle industry and its suppliers report the greatest demand for engineers, with 84 per cent of the companies expecting a growing or even strongly increasing demand.
- The electrical and electronics branch has a similarly great demand.
- The building and chemicals industries follow at a clear distance, but still aim to hire more engineers than they let go.
- In the service sector, even among firms providing services to companies, the demand for technical staff is restrained. Companies that need new people and those that do not are more or less equal in number.

Industrial companies evidently like to keep their technical departments in-house. Electrical and electronics engineers above all have rosy prospects. More than every third such company polled said it intends to top up its stock of them.

There is also potential in the job market for engineers with double degrees (say 30 per cent of the companies) and for mechanical engineers (25 per cent). Process engineers do not have such good cards. But also here, more companies (23 per cent) expect a growing demand for them than a declining need (4 per cent).

As a whole, the need for engineers will increase by 8 per cent per year to 2002. That growth will be driven mainly by small companies. Firms with a maximum of 49 employees aim to increase their posts for engineers by 11 per cent.

Two problems remain, however. The boom is largely passing by older engineers. This is where ways must be found to update their knowledge to the state-of-the-art on a practical basis so that they, too, will once again have professional prospects. Second, despite the current excellent job market opportunities for university entrants, there is no absolute guarantee that when they complete their studies the situation will not have changed again.

IN Press